

## Ball Catching Tool

This nonprovisional application is based on Japanese Patent Application No. 2003-204773 filed with the Japan Patent Office on July 31, 2003 the entire contents of which are hereby incorporated by reference.

### BACKGROUND OF THE INVENTION

#### Field of the Invention

The present invention relates to a ball catching tool, and more particularly, it relates to the structure of a ball catching tool for baseball or softball.

#### 10 Description of the Background Art

A ball catching tool employed for baseball or softball is prepared by inserting an inner leather member formed by sewing a palm member and a back member to each other into an outer leather member formed by sewing a leather pocket and a leather back to each other, providing a core of felt or the like between the leather pocket and the palm member, sewing the outer and inner leather members to each other and thereafter binding these members to each other with leather strings, for example.

The aforementioned inner leather member is provided with baglike or cylindrical thumb and finger stalls for receiving the thumb and the fingers of the user respectively. While the user of the ball catching tool catches a ball by grasping the same with the thumb inserted into the thumb stall and the fingers received in the finger stalls, it is particularly desirable that he/she efficiently transmits the power of the thumb to the ball catching tool. In general, however, a thumb receiving hole provided in the thumb stall is so sized as to exceed the thickness of the thumb. In order to fix the thumb in the thumb stall so that the user can efficiently transmit the power of the thumb to the ball catching tool, therefore, various contrivances have been devised in general.

For example, Japanese Patent Laying-Open No. 2001-161884 describes a thumb hold provided in a thumb stall, Japanese Patent Laying-Open No. 10-15143 (1998) describes a baseball glove provided with a thumb fixing band, Japanese Utility Model

Laying-Open No. 55-161573 (1980) describes a baseball glove provided with a finger control member consisting of an annular band, Japanese Patent Laying-Open No. 11-206949 (1999) (Japanese Patent No. 2911863) describes a ball catching tool for baseball/softball having a clamping band to a thumb receiving portion, Japanese Patent Laying-Open No. 8-215367 (1996) describes a glove provided with a thumb stop holding the thumb of the user, and Japanese Utility Model Laying-Open No. 3-96870 (1991) describes a glove or a mitt provided with a thumb contact section.

On the other hand, Japanese Utility Model Laying-Open No. 62-9482 (1987) describes a baseball glove having a buffering leather partition fitted to one of a forefinger stall, a middle finger stall and a ring finger stall, and Japanese Utility Model Laying-Open No. 59-145965 (1984) describes a baseball glove formed by fixing a band body to a little finger stall in a bent state to parallelly arrange a loop-like finger receiving portion.

Each of thumb fixing members such as the thumb hold described in the aforementioned Japanese Patent Laying-Open No. 2001-161884, the finger control member described in Japanese Utility Model Laying-Open No. 55-161573, the clamping band described in Japanese Patent Laying-Open No. 11-206949 (Japanese Patent No. 2911863), the finger stop described in Japanese Patent Laying-Open No. 8-215367 and the thumb contact section described in Japanese Utility Model Laying-Open No. 3-96870 is fixed to a ball catching tool by binding strings thereto or pulling a band-like member.

However, it is not easy to locate the thumb of the user on the optimum position with the thumb fixing member but the thumb may disadvantageously be fixed to a position deviating from a desired position such that the user cannot efficiently transmit the power of his/her thumb to the ball catching tool.

Further, the strings of the thumb fixing member may be loosened due to frequent use of the ball catching tool. Thus, it is difficult to ensure desired clamping force of the thumb fixing member for the thumb over a long period, and hence the

thumb fixing member must disadvantageously be frequently adjusted.

## SUMMARY OF THE INVENTION

The present invention has been proposed in order to solve the aforementioned problems, and an object of the present invention is to provide a ball catching tool enabling the user to easily fix his/her thumb to a desired position in the ball catching tool and capable of ensuring desired fitness over a long period with no requirement for frequently adjusting the position of the thumb.

According to an aspect of the present invention, the inventive ball catching tool comprises an outer leather member, an inner leather member and an elastic member.

The outer leather member is formed by sewing an outer palm leather and an outer back leather to each other. The inner leather member, inserted into the outer leather member, is formed by sewing a palm member located on the side of the outer palm leather and a back member located on the side of the outer back leather to each other and provided with a plurality of stalls including a thumb stall receiving the thumb of the user. The elastic member is fixed to the back member partially forming the thumb stall to extend along the back member from one end of the thumb stall toward the other end of the thumb stall in a width (cross) direction of the thumb stall for fixing the thumb of the user in the thumb stall.

The aforementioned elastic member is so fitted to the thumb stall of the inner leather member that the elastic member can provide proper elastic force (clamping force) to the thumb of the user inserted into the thumb stall. The user can fix the position of his/her finger in a proper range while ensuring a certain degree of allowance in the thumb stall due to this elastic force.

The ball catching tool according to the present invention preferably further comprises a fixing member fixing the aforementioned elastic member to the thumb stall. In this case, the fixing member is preferably provided with an opening for rendering the thumb of the user easily bendable in the thumb stall. Further, the aforementioned elastic member and the fixing member may be fitted or attached to the outer surface of

the thumb stall, to the inner surface of the thumb stall, or to both of the outer and inner surfaces of the thumb stall. While the inner leather member has a little finger stall receiving the little finger of the user, the aforementioned elastic member may be fitted or attached to this little finger stall.

5           According to another aspect of the present invention, the inventive ball catching tool comprises a thumb stall receiving the thumb of the user, a forefinger stall receiving the forefinger of the user, a middle finger stall receiving the middle finger of the user, a ring finger stall receiving the ring finger of the user, a little finger stall receiving the little finger of the user and an elastic member. The elastic member extends in the  
10           width direction of the thumb stall along the back side of the thumb stall to cover a thumb receiving hole provided in the thumb stall for fixing the thumb of the user in the thumb stall. According to this aspect, the thumb stall includes both thumb stalls of outer and inner leather members, and the elastic member may be fixed to either thumb stall.

15           Also according to this aspect, the elastic member can provide proper elastic force (clamping force) to the thumb of the user inserted into the thumb stall, and the user can fix the position of his/her thumb in a proper range due to this elastic force.

          According to still another aspect of the present invention, the inventive ball catching tool comprises a thumb stall receiving the thumb of the user, a forefinger stall  
20           receiving the forefinger of the user, a middle finger stall receiving the middle finger of the user, a ring finger stall receiving the ring finger of the user, a little finger stall receiving the little finger of the user and a cylindrical or tube-like elastic member inserted into the thumb stall for fixing the thumb of the user in the thumb stall. Also  
          according to this aspect, the thumb stall includes both thumb stalls of outer and inner  
25           leather members, and the cylindrical elastic member may be inserted into either thumb stall. The aforementioned "cylindrical elastic member" may be an elastic member having a cylindrical or tube-like portion capable of receiving the thumb of the user, and a baglike elastic member having a closed opening is also included in the concept of the

aforementioned "cylindrical elastic member", for example. The cylindrical elastic member, typically fixed to the thumb stall, may not necessarily be positively fixed to the thumb stall if the same can be relatively strongly fixed to the thumb stall simply upon insertion.

5           Also when the cylindrical elastic member is inserted into the thumb stall as described above, the cylindrical elastic member can provide proper elastic force (clamping force) to the thumb of the user, and the user can fix the position of his/her thumb in a proper range due to this elastic force.

10           The foregoing and other objects, features, aspects and advantages of the present invention will become more apparent from the following detailed description of the present invention when taken in conjunction with the accompanying drawings.

#### BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a front elevational view of a ball catching tool according to an Example of the present invention;

15           Fig. 2 is a plan view of an inner leather member of the ball catching tool according to the Example of the present invention;

Fig. 3 is a sectional view taken along the line III-III in Fig. 2, showing a thumb stall of the inner leather member;

20           Fig. 4 is a sectional view showing an elastic member and a fixing member fitted into another thumb stall;

Fig. 5 is a sectional view showing an elastic member and a fixing member fitted into a little finger stall; and

Fig. 6 is a perspective view showing an exemplary cylindrical elastic member.

#### DESCRIPTION OF THE PREFERRED EMBODIMENTS

25           An embodiment of the present invention is now described. A ball catching tool according to this embodiment is a tool for catching a ball such as a glove or a mitt for baseball or softball, and comprises an outer leather member, an inner leather member inserted into the outer leather member, a core having a function of relaxing

impact applied from a caught ball, an elastic member having a function of fixing the thumb or the little finger of the user in a thumb stall or a little finger stall and a fixing member fixing the elastic member to the thumb stall or the little finger stall.

5 The outer leather member is formed by sewing a leather pocket (outer palm leather) consisting of natural or synthetic leather or a material homogeneous therewith and a leather back (outer back leather) consisting of natural or synthetic leather or a material homogeneous therewith to each other. The outer leather member has a thumb stall receiving the thumb of the user, a forefinger stall receiving the forefinger of the user, a web portion provided between the thumb stall and the forefinger stall, a middle  
10 finger stall receiving the middle finger of the user, a ring finger stall receiving the ring finger of the user and a little finger stall receiving the little finger of the user.

The inner leather member is formed by sewing a palm member located on a leather palm and a back member located on a leather back to each other. The palm member and the back member can also be composed of natural or synthetic leather or a  
15 material homogeneous therewith. The inner leather member also has a thumb stall, a forefinger stall, a middle finger stall, a ring finger stall and a little finger stall, similarly to the outer leather member. These thumb and finger stalls are inserted into the corresponding thumb and finger stalls of the outer leather member, i.e., the thumb stall, the forefinger stall, the middle finger stall, the ring finger stall and the little finger stall  
20 of the outer leather member respectively. The core, set between the leather pocket and the palm member, is made of a material such as felt.

The ball catching tool according to this embodiment can be prepared by inserting the aforementioned inner leather member into the outer leather member, setting the core between the leather pocket and the palm member, sewing required  
25 portions of the inner and outer leather members to each other and coupling or tying the same with leather strings.

The elastic member is made of an elastic material such as rubber or urethane form. This elastic member, typically attached or fixed to a portion of the back

member partially forming the thumb stall and/or the little finger stall of the inner leather member, extends along the back member from an end of the thumb stall and/or the little finger toward the other end in the width direction perpendicular to the longitudinal direction of the thumb stall and/or the little finger stall.

5           The elastic member may extend along the back portion of the thumb stall of the outer or inner leather member in the width direction thereof to cover a thumb receiving hole (hole for receiving the thumb of the user) provided in the thumb stall, or may extend along the back portion of the little finger stall of the outer or inner leather member in the width direction thereof to cover a little finger receiving hole (hole for  
10 receiving the little finger of the user) provided in the little finger stall.

          The elastic member may have a cylindrical or tube-like shape, to be inserted into the thumb stall or the little finger stall of the outer or inner leather member. This cylindrical elastic member may be an elastic member having a cylindrical or tube-like portion capable of receiving the thumb or the little finger of the user, and a baglike  
15 elastic member having a closed end, an elastic member formed by rounding a sheetlike elastic member or an elastic member provided with a tube-like portion having an arbitrary sectional shape other than a circular (annular shape) is also employable. The cylindrical elastic member, typically attached or fixed to the thumb stall and/or the little finger stall, may not necessarily be positively fixed to the thumb stall and/or the little  
20 finger stall if the same can be relatively strongly fixed to the thumb stall and/or the little finger stall simply upon insertion.

          The aforementioned elastic member fitted to the thumb stall can supply proper elastic force (clamping force) for wrapping up and holding the thumb of the user while supplying proper force from the periphery for preventing the thumb from unnecessary  
25 movement in the thumb stall when the user inserts his/her thumb into the thumb stall. In other words, the elastic member can hold the thumb on a proper position (preferably on the central portion of the thumb stall) while supplying proper elastic force to the thumb of the user for inhibiting the thumb from moving to an improper position.

Therefore, the user can fix the position of his/her thumb in a proper range while ensuring a certain degree of allowance in the thumb stall for efficiently transmit the power of the thumb to the ball catching tool. Similar effects can be expected also when the elastic member is fixed or fitted to the little finger stall.

5 Further, the elastic member fixed to the thumb stall or the little finger stall in the aforementioned mode can supply proper clamping force to the thumb or the little finger of the user integrally with the thumb stall or the little finger stall for ensuring desired fitness over a long period. Particularly when the width of the thumb stall or the little finger stall is previously reduced, the fitness can be improved.

10 In addition, the elastic member fixed to the thumb stall or the little finger stall hardly deviates after the same is fitted to the thumb stall or the little finger stall. Therefore, the position of the elastic member may not be adjusted later. In particular, it is possible to effectively inhibit the elastic member from deviation by fixing substantially the overall elastic member to the thumb stall or the little finger stall with  
15 an adhesive or the like.

The fixing member can be made of natural or synthetic leather or a material homogeneous therewith, for example. When made of a material harder than that of the elastic member, the fixing member is more hardly deformed than the elastic member, to be capable of reliably and efficiently supplying desired elastic force to the  
20 thumb or the little finger of the user.

The aforementioned fixing member is arranged on the surface of the elastic member to fix the elastic member to the thumb stall or the little finger stall, and fitted to the thumb stall or the little finger stall to hold the elastic member between the fixing member and the thumb stall or the little finger stall. In order to fix the elastic member  
25 to the thumb stall or the little finger stall of the inner leather member, the fixing member may be sewn to the palm member along with the back member in the vicinity of both ends of the thumb stall or the little finger stall in the width direction thereof, for example. In order to fix the elastic member to the thumb stall or the little finger stall



of the outer leather member, the fixing member may be sewn to the leather back in the vicinity of both ends of the thumb stall or the little finger stall in the width direction thereof to hold the elastic member between the inner surface of the leather back and the fixing member, for example. The elastic member can be fixed to a desired stall with the fixing member in the aforementioned manner.

The aforementioned fixing member is preferably provided with an opening. This opening is preferably provided to be located on the first joint of the thumb or on the first joint and/or the second joint of the little finger when the user inserts his/her thumb or little finger into the stall. Thus, the user can easily bend his/her thumb or little finger in the thumb stall or the little finger stall. While the opening may conceivably have a circular or elliptic shape, still another arbitrary shape is employable for the opening so far as the aforementioned effect is attained.

Further, the fixing member may be fitted onto the outer surface of at least either the thumb stall or the little finger stall of the outer leather member, onto the inner surface of at least either the thumb stall or the little finger stall of the outer leather member, onto the outer surface of at least either the thumb stall or the little finger stall of the inner leather member or onto the inner surface of at least either the thumb stall or the little finger stall of the inner leather member along with the aforementioned elastic member.

A ball catching tool according to an Example of the present invention is now described with reference to Figs. 1 to 6.

Fig. 1 is a front elevational view of a ball catching tool (baseball or softball glove) 1 according to this Example. As shown in Fig. 1, the ball catching tool 1 according to this Example comprises an outer leather member 10 formed by connecting a leather pocket 8 including a pocket portion and a leather back 9 to each other with leather strings or the like. The outer leather member 10 is made of natural or synthetic leather.

The outer leather member 10 comprises a thumb stall 2, a forefinger stall (first

finger stall) 4, a middle finger stall (second finger stall) 5, a ring finger stall (third finger stall) 6 and a little finger stall (fourth finger stall) 7 receiving the thumb, the forefinger, the middle finger, the ring finger and the little finger of the user respectively, a web portion 3 provided between the thumb stall 2 and the forefinger stall 4 and a hand receiving portion for receiving the hand of the user in the ball catching tool 1.

The ball catching tool 1 also has an inner leather member 11 shown in Fig. 2 inside the aforementioned outer leather member 10. The inner leather member 11 is formed by sewing a palm member 12 and a back member 13 arranged on the palm and the back of the user's hand respectively to each other. In consideration of the touch of the ball catching tool 1, the palm member 12 and the back member 13 are prepared from softly tanned leather. The ball catching tool 1 according to this Example can be prepared by sewing required portions of the aforementioned inner and outer leather members 11 and 10 to each other and connecting these members 11 and 10 to each other with leather strings or the like.

As shown in Fig. 2, the inner leather member 11 also has a thumb stall 2A, a forefinger stall (first finger stall) 4A, a middle finger stall (second finger stall) 5A, a ring finger stall (third finger stall) 6A and a little finger stall (fourth finger stall) 7A receiving the thumb, the forefinger, the middle finger, the ring finger and the little finger of the user respectively, similarly to the outer leather member 10.

Referring to Fig. 2, the palm member 12 and the back member 13 are so cut that the widths of portions of the back member 13 forming the thumb stall 2A and the finger stalls 4A, 5A, 6A and 7A of the inner leather member 11 respectively are smaller than those of portions of the palm member 12 forming the thumb stall 2A and the finger stalls 4A, 5A, 6A and 7A respectively, and portions close to both ends in the width direction of the portions of the back member 13 forming the thumb stall 2A and the finger stalls 4A, 5A, 6A and 7A respectively are sewn to the palm member 12 while opening longitudinal ends of the back member 13. In particular, a notch 17 is provided on the portion of the back member 13 forming the thumb stall 2A, thereby

reducing the width (W) of the root (base) of the portion of the back member 13 forming the thumb stall 2A. Thus, the widths (W) of the portions of back member 13 forming the thumb stall 2A and the finger stalls 4A, 5A, 6A and 7A respectively are rendered smaller than those of the portions of the palm member 12 forming the thumb stall 2A and the finger stalls 4A, 5A, 6A and 7A respectively so that the widths of the thumb stall 2A and the finger stalls 4A, 5A, 6A and 7A can be reduced and a remarkable effect by an elastic member 14 can be expected.

As shown in Fig. 2, the sheetlike elastic member 14 is arranged on the portion of the back member 13 forming the thumb stall 2A, and a sheetlike fixing member 15 is placed on this elastic member 14. More specifically, the elastic member 14 and the fixing member 15 are stacked on and fixed to the portion of the back member 13 forming the root (base) of the thumb stall 2A.

The elastic member 14 and the fixing member 15 extend along the back member 13 from an end of the thumb stall 2A toward the other end in the width direction shown by arrow in Fig. 2. Further, the elastic member 14 and the fixing member 15 extend along the portion of the back member 13 forming the thumb stall 2A in the width direction of the thumb stall 2A to cover a thumb receiving hole provided in the thumb stall 2A.

The elastic member 14 is constituted of a urethane foam sheet, and the fixing member 15 is made of sheetlike natural or synthetic leather. In the example of Fig. 2, the elastic member 14 is fixed onto the surface of the back member 13 with an adhesive, and the fixing member 15 is sewn to the palm member 12 and the back member 13 in the vicinity of both side ends thereof. The fixing member 15 has a substantially elliptic opening 16 on the central portion thereof.

Fig. 3 is a sectional view of the thumb stall 2A taken along the line III-III in Fig. 2. As shown in Fig. 3, the palm member 12 and the back member 13 define a thumb receiving hole 18 for receiving the thumb of the user, while the elastic member 14 and the fixing member 15 are fixed onto the outer surface of the back member 13 (outer

side of the thumb stall 2A). More specifically, both side ends of the fixing member 15 are superposed on both side ends of the back member 13 and the fixing member 15 and the back member 13 are sewn to the palm member 12, thereby fixing the elastic member 14 to the back member 13.

5            Fig. 4 is a sectional view of a modified thumb stall 2A. As shown in Fig. 4, an elastic member 14 and a fixing member 15 may be fixed onto the inner surface of a back member 13 (inner side of the thumb stall 2A). In the section shown in Fig. 4, the fixing member 15 and a palm member 12 define a thumb receiving hole 18 for receiving the thumb of the user.

10            As shown in Fig. 5, an elastic member 14 and a fixing member 15 may be fixed to a portion of a back member 13 forming a little finger stall 7A. Further, a cylindrical elastic member 19 shown in Fig. 6 may be prepared to be inserted into the thumb stall 2A or the little finger stall 7A. The cylindrical elastic member 19 can be prepared from rubber or the like.

15            While the embodiment and the Example of the present invention have been described, it is also planned from the first to properly combine the aforementioned characteristic structures with each other.

              According to the present invention, the user of the ball catching tool can fix his/her thumb to a position in a proper range in the thumb stall by simply inserting the  
20            thumb into the thumb stall. Therefore, he/she can efficiently transmit the power of his/her thumb to the ball catching tool.

              According to the present invention, further, the elastic member is inserted into or fixed to the thumb stall of the inner or outer leather member, so that the elastic member can supply proper elastic force (clamping force) to the thumb of the user  
25            substantially integrally with the thumb stall. Therefore, the elastic member so substantially reinforces the thumb stall that fitness of the ball catching tool can be ensured over a long period.

              In addition, the elastic member hardly deviates once the same is fitted to the

thumb stall. Therefore, it is not necessary to adjust the attached position of the elastic member.

5 Although the present invention has been described and illustrated in detail, it is clearly understood that the same is by way of illustration and example only and is not to be taken by way of limitation, the spirit and scope of the present invention being limited only by the terms of the appended claims.